

Rhodora

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THE GENUS GALINSOGA IN NORTH AMERICA.

HAROLD ST. JOHN AND DONALD WHITE.

IN his studies of the "Ferns and Flowering Plants of Nantucket,"¹ E. P. Bicknell has raised to specific rank, as *Galinsoga aristulata* Bicknell, the plant that had previously passed as *G. parviflora* Cav., var. *hispida* DC. This variety is distinguished from the species *G. parviflora* in the 7th edition of Gray's Manual² on having "Pubescence more copious, not appressed; pappus-scales of the disc-flowers attenuate and bristle-tipped." As Bicknell points out, the name *hispida* cannot be used for the plant in the specific category because of the earlier *G. hispida* Benth. He draws contrasts between the plant under consideration and various species in this and related genera, but his only comparison between it and the very closely related *G. parviflora* is, "This now widespread weed wherever I have met with it has not failed to prove itself always readily distinguishable from the true *G. parviflora* Cav., even without reference to the constant and pronounced differences in the pappus scales." If the plant does differ from its relative in a constant and pronounced character of the pappus-scales, as well as in vegetative characters, it would be reasonable to treat it as a species. The writers became interested in this question, and have endeavored to verify the point. As is very often the case, this small question led on to the larger one, of checking and evaluating the characters used to separate the species of the genus. We found that obvious and constant characters existed, especially in the pappus of the ray- and disc-flowers, and we

¹ Bicknell, E. P. Bull. Torr. Bot. Cl. xliii. 270 (1916).

² Robinson, B. L., and Fernald, M. L. Gray's Man. ed. 7. 843 (1908)

feel that these constant floral differences should be used as the primary characters in distinguishing the species. We present a synopsis of the North American species as we understand them. With these is included one Bolivian species not heretofore recognized.

KEY TO THE SPECIES.

- A. Ray-flowers purple or roseate-purple.
 - B. Disc- and ray-flowers both purple; achene of ray-flower glabrous or nearly so, its pappus of a few bristles; leaves short, entire, petioled, narrowly deltoid-lanceolate; stem subsimple, strict, the internodes elongate. 1. *G. purpurea* St. John & White.
 - B'. Disc-flowers yellow; pappus of ray-flowers of linear-lanceolate fimbriate scales; leaves slender-petioled, coarsely serrate, ovate or ovate-lanceolate; stems freely branching.
 - C. Pappus of disc-flowers of linear-lanceolate fimbriate scales half the length of the corolla, corolla exceeding the achene; ligule oblong, 3-toothed at apex, its tube exceeding the linear fimbriate pappus-scale, the achene of the ray-flower glabrate or hispidulous on one side. 2. *G. caracasana* (DC.) Sch. Bip.
 - C'. Pappus of disc-flowers firm, linear, fimbriate, long-aristate, equalling the corolla, disc-corolla barely equalling its achene; ligule tripartite, the two lateral lobes widely divergent, tube of ray-flower very broad, shorter than the glabrate or hispid achene and shorter than the linear minutely fimbriate aristate pappus-scale.
 - 3. *G. bicolorata* St. John & White.
 - A'. Ray-flowers yellowish or whitish.
 - D. Pappus of disc-flowers aristate, fimbriate, equalling or nearly equalling the corolla; pappus of ray-flowers of linear minutely fimbriate scales equalling the tube of the flower, achene of ray-flowers densely hispid on the inner face; leaves ovate or ovate-lanceolate, coarsely serrate; stems at the nodes and the peduncles with a coarse spreading white often glandular hispidity. ... 4. *G. aristulata* Bicknell.
 - D'. Pappus of disc-flowers not aristate; pappus of ray-flowers wanting or a few bristles, their achenes glabrous or minutely pilose on one side.
 - E. Pappus of disc-flowers linear-lanceolate, conspicuously fimbriate, equalling or even exceeding the corollas; pappus of ray-flowers wanting, the achenes minutely hispidulous at summit or glabrate; a freely branching plant with slender-petioled ovate-lanceolate coarsely or bluntly serrate leaves; peduncles and stems near the nodes clothed with a fine appressed rarely glandular pilosity.
 - 5. *G. parviflora* Cav.
 - E'. Pappus of disc-flowers linear, fimbriate, two-thirds the length of the corolla-tube; pappus of ray-flowers of a few short white bristles or wanting, the achenes minutely hispidulous at summit or glabrate; a strict plant rarely branching from the base; the internodes elongate; the leaves short-petioled, linear-lanceolate or narrowly deltoid-lanceolate, bluntly serrate to subentire; pedicels and nodes of the stem with a coarse partly appressed puberulence.
 - 6. *G. semicalva* (Gray) St. John & White.

1. *GALINSOGA purpurea* sp. nov. annua tenuis, 1-2.5 dm. alta; caulibus subsimplicibus, sparse hispidis, internodiis elongatis; foliis oppositis anguste deltoideo-lanceolatis breviter hispidis integris breviter petiolatis 1-2 cm. longis, 1.5-5 mm. latis; pedicellis hispidis; capitulis

pedicellatis globosis parvis 3–4 mm. altis, 2.5–3.5 mm. diametro, squamis 4–5 ovatis glabris scariosis flavo-viridibus, receptaculo conico, paleis pallidis linearibus anguste bidentatis; floribus radiatis femineis purpureis ca. 4, ligulis brevibus oblongis tridentatis, tubis pilosis, achaeniis oblanceolato-ovoideis, pappi squamis parvis; floribus disci hermaphroditis purpureis, tubis infundibuliformibus achaenia aequantibus, achaeniis deltoideo-obovoideis hispidis, pappi squamis lineari-lanceolatis fimbriatis attenuatis vel aristatis dimidiis vel bessibus longitudinis tubarum collarum.

A slender annual, 1–2.5 dm. tall: stem nearly simple, sparsely hispid; leaves opposite, short-hispid, narrowly deltoid-lanceolate, short-petioled, 1–2 cm. long, 1.5–5 mm. broad: pedicels hispid: flower heads pedicelled, small, 3–4 mm. high, 2.5–3.5 mm. in diameter; involucre scales 4–5, ovate, glabrous, scarious, yellowish-green; receptacle conical; chaff pale, linear, narrowly bidentate; ray-flowers pistillate, about 4 to a head, the ligules purple, short, oblong, 3-toothed, the corolla-tube pilose, the achenes oblanceolate-ovoid, pappus of a few bristles; disc-flowers perfect, the tube purple, funnel-shaped, as long as the achenes, achenes deltoid-obovoid, hispid, pappus-scales linear-lanceolate, attenuate or aristate-fimbriate, half or two-thirds the length of the corolla-tube.

BOLIVIA: Bolivian Planteau, 1891, *Miguel Bang*, no. 1,148 (TYPE in Gray Herb.).

2. *G. CARACASANA* (DC.) Sch. Bip., *Linnaea* xxxiv, 529 (1865–6). *Vargasia Caracasana* DC., *Prodr.* v. 676 (1836).

Native of South and Central America, introduced into eastern North America and established especially near the larger cities. *C. F. Parker* found it at Camden, New Jersey, as early as 1870.

3. *G. bicolorata* sp. nov. annua ramosa, 2–3 dm. alta; caulibus hispidis infra glabris, nodis superioribus valde hispidis; foliis oppositis petiolatis lanceolato-cordatis breviter caudatis grosse obtuse-que serratis hispidis, 1.5–4 cm. longis, 4–35 mm. latis; pedunculis glanduloso-pilosis; capitulis hemisphaericis, 3–4 mm. altis, 3–5 mm. diametro, squamis exterioribus sparse glanduloso-pilosis, receptaculo conico, paleis pallide bruneis linearibus minute ciliatis; floribus radiatis femineis purpureis, corollis achaenia aequantibus vel vix superantibus, ligulis tridentatis cruciformibus dentibus lateralibus valde divergentibus, tubis latis pilosis, achaeniis obdeltoideis angulatis hispidis, 2 mm. longis, pappi squamis firmis albidis tubum corollae superantibus linearibus longe aristatis fimbriatis; floribus disci hermaphroditis, tubis flavis achaenia superantibus, pappi squamis firmis albidis linearibus fimbriatis longe aristatis tubum corollae aequantibus vel paulo superantibus, achaeniis obdeltoideis 1.5–2 mm. longis hispidis.

A branching annual, 2–3 dm. tall: stem glabrate below, hispid at the nodes and strongly so above: leaves opposite, petioled, hispid,

lanceolate-cordate, short-caudate, coarsely and bluntly serrate, 1.5-4 cm. long, 4-35 mm. broad: peduncles glandular-pilose: heads hemispherical, 3-4 mm. high, 3-5 mm. in diameter; outer involucre bracts sparsely glandular-pilose; receptacle conical; chaff pale brown, linear, minutely ciliate; ray-flowers pistillate, purple, equalling or slightly exceeding their achenes, ligule 3-toothed, cruciform, the lateral teeth widely divergent, corolla-tube broad, pilose, achene obdeltoid, angular, hispid, 2 mm. long, pappus firm, white, longer than the corolla-tube, linear, fimbriate and long-aristate; disc-flowers perfect, corolla yellow, the tube exceeding the achene, pappus firm, white, linear, and long-aristate, equalling or slightly exceeding the corolla-tube, achenes obdeltoid, hispid, 1.5-2 mm. long.

MEXICO: altitude 4000-5500 feet, Tumbala, Chiapas, Oct. 20, 1895, *E. W. Nelson*, no. 3,356 (TYPE in Gray Herb.). COSTA RICA: altitude 4,250 feet, Cartago, Prov. Cartago, Oct., 1887, *Juan J. Cooper*, no. 5,815, in part; altitude 1,500 m., San Rafael de Cartago, Aug. 28, 1892, *H. Pittier*, no. 6,989.

Recently introduced in eastern North America. MASSACHUSETTS: shore of Charles River between Mass. Ave. and Anderson Bridge, Cambridge, Sept. 26, 1916, *F. S. Collins*, no. 3,797.

4. *G. ARISTULATA* Bicknell, Bull. Torr. Bot. Cl. xliii. 270 (1916). *G. parviflora* Cav., γ. *hispida* DC., Prodr. v. 677 (1836), not *G. hispida* Benth.

Native of South and Central America, introduced and becoming very common in the eastern United States. In 1866 it was found by Joseph Blake at Gilmanton, New Hampshire.

5. *G. PARVIFLORA* Cav., Icon. Descr. Pl. iii. 41, t. 281 (1795).

Native of South and Central America, and Mexico, introduced in the United States, where it is casual, especially near the larger cities, from the Atlantic to the Pacific coast. Dr. Gray in his Manual ed. 2, 225 (1856) reports the plant on waste places at Cambridge, New York, and Philadelphia.

6. *G. semicalva* (Gray) comb. nov. *G. parviflora* Cav., var. *semicalva* Gray, Pl. Wrightianae ii. 98 (1853). This native species of the mountains of northern Mexico and the southwestern states was first collected by Charles Wright in 1851, and described by Asa Gray as a variety of *G. parviflora*. Wright's no. 1,268, the type of var. *semicalva* has, as Gray pointed out, the ray achenes glabrous and lacking pappus. Wright's no. 1,267, collected in the same region, has the ray-achenes "slightly hairy near the summit, and furnished with a very small setiform pappus." This collection Gray identified with *G. caracasana*, a purple-flowered species. Wright's no. 1,267 does not appear to have purple rays. Its natural affinity seems to the writers to be with *G. semicalva*, the slender native species of that region. An inspection of these two specimens, and others from the adjacent regions, shows that the ray-achenes may be hispidulous at summit

- J. C. W. (Gray) Blake, Rhod. 29, 1922, adventing ciliate Ray. n. p. p. n. am. 11. 67, 1836.

Agaveus, B.C. J. R. Anderson Aug. 6, 1903.

or glabrate and have the pappus of a few short white bristles or wanting. All these plants differ constantly from the other species in the reduction of ray pappus, as well as the other floral and foliage characters emphasized in our key. Consequently, having studied abundant material of the group and realizing the constancy and importance of particular floral characters, especially those of the pappus, we raise var. *semicalva* to specific rank.

NEW MEXICO: side of mountains, at copper mines, Oct., 1851, *Charles Wright*, no. 1,268 (TYPE); Valley of Coppermine Creek, Aug., Oct., 1851, *Charles Wright*, no. 1,267; altitude 7,000 feet, White Mountains, Aug. 12, 1897, *E. O. Wootton*, no. 501; Forest Nursery, Fort Bayard, Oct. 1, 1905, *J. C. Blumer*, no. 102. ARIZONA: altitude 8,100 feet, Grand View, Chiricahua Mts., Sept. 10, 1907, *J. C. Blumer*, no. 1,652; in shade, sandy alluvium, near Cedar Gulch, Paradise, altitude 5,300 feet, Chiricahua Mts., Sept. 21, 1907, *J. C. Blumer*, no. 1,713; sandy washes, Mule Mts., Oct. 8, 1910, *L. N. Goodding*, no. 924. CHIHUAHUA: altitude 7,500 feet, near Colonia Garcia in the Sierra Madres, Aug. 7, 1899, *C. H. T. Townsend & C. M. Barber*, no. 241; near Colonia Garcia, Aug. 1-20, 1899, *E. W. Nelson*, no. 6,212; along road to Porral, near San Julian, altitude 7,000-8,000 feet, Sept. 8, 1898, *E. W. Nelson*, no. 4,936. SAN LUIS POTOSI: in arenosis circa urbem, Sept., 1876, *J. G. Shaffner*, no. 234.

GRAY HERBARIUM.

A NEW DIGITARIA FROM NEW HAMPSHIRE

M. L. FERNALD

THE only indigenous species of *Digitaria* heretofore recognized as far north as New England is *D. filiformis* (L.) Koeler, which reaches its northern limit in the gravelly and sandy regions of northern Essex County, Massachusetts, and southern Hillsboro County, New Hampshire. Slightly to the north, however, in northeastern Hillsboro County, the late F. W. Batchelder discovered in September, 1901, a remarkable species which he distributed to various herbaria as *Syntherisma filiforme* (L.) Nash (= *D. filiformis*) but which, except for its superficial resemblance, is quite distinct from the latter species. A detailed review of all the North American species of the genus clearly shows that Mr. Batchelder's plant is a unique species as nearly allied to the two local species of Florida, *D. gracillima*¹

¹DIGITARIA *gracillima* (Scribn.), n. comb. *Panicum gracillimum* Scribn. Bull. Torr. Bot. Cl. xxiii. 146 (1896). *Syntherisma gracillima* [um] (Scribn.) Nash, Bull. Torr. Bot. Cl. xxv. 295 (1898).

and *D. Bakeri*¹ as to the more northern *D. filiformis*. The New Hampshire plant may be called

DIGITARIA laeviglumis, n. sp., annua, habitu staturaque ut apud *D. filiformem*; foliis remotis vaginibus glabris vel hirsutis, laminis planis glabris 1.5–9 cm. longis, ligula scariosa subtruncata erose dentata 1 mm. longa; panícula longe exserta, racemis 2–3 valde adscendentibus 2–9 cm. longis 1–2 mm. latis, rhachi flexuoso angulato-filiforme; spiculis 1.8–2 mm. longis ellipsoideis glaberrimis; gluma inferiore obsoleta, superiore hyalina elliptico oblongata apice rotundata valde 3-nervia; lemmate obtuso 5–7-nervato; caryopsi ellipsoidea acuminata atrata puncticulato-striata.

Annual, with the habit and stature of *D. filiformis*: leaves remote; the sheaths glabrous or hirsute; blades flat, glabrous, 1.5–9 cm. long; ligule scarious, subtruncate, erose-dentate, 1 mm. long; panicle long-exserted; racemes 2–3, strongly ascending, 2–9 cm. long, 1–2 mm. wide; the rhachis flexuous, angulate-filiform: spikelets 1.8–2 mm. long, ellipsoid, strictly glabrous: lower glume obsolete; second glume hyaline, elliptic-oblong, rounded at summit, prominently 3-nerved: lemma obtuse, 5–7-nerved: caryopsis ellipsoid, acuminate, black, punctulate-striate.—NEW HAMPSHIRE: Manchester, rare, September 11, 1901, *F. W. Batchelder* (TYPE in Gray Herb.).

From *D. filiformis* quickly distinguished by its glabrous spikelet, translucent hyaline glume, and truncate erose-dentate ligule; *D. filiformis* having the spikelet pubescent with gland-tipped hairs, the opaque glume and lemma ciliate and the more prolonged ligule fimbriate-ciliate. As stated, *D. laeviglumis* is as nearly related to two rare species of the sands of Florida, but both *D. gracillima* and *D. Bakeri* are tall (0.6–1 m.) perennials with very long and slender leaves and long racemes (1.5–3 dm. long) and ligules, the former species with a very short subtruncate second glume, the latter with longer spikelets (2.5 mm.) and with the acute second glume pilose at the apex.

D. laeviglumis is another addition to the already considerable list of distinctive plants of the sands of New England which show close affinities to or identities with plants of the pine barrens of Florida and southern Georgia—such plants as *Sagittaria teres* Watson, from which *S. isoetifolia* J. G. Sm. is scarcely separable; *Scirpus Hallii* Gray, and *Sabatia Kennedyana* Fernald, nearest related to *S. decandra* (Walt.) Harper (see RHODORA, xviii. 150). That the New England *Digitaria* showing this Floridian relationship should

¹*D. Bakeri* (Nash), n. comb. *Syntherisma Bakeri* Nash, Bull. Torr. Bot. Cl. xxv. 296 (1898).

come from southern New Hampshire rather than southeastern Massachusetts is, however, somewhat surprising, although the New Hampshire stations for *Rynchospora Torreyana* Gray and *Sclerolepis uniflora* (Walt.) BSP. are in nearly the same latitude and only thirty to thirty-five miles away. The discovery of these three plants indicates that the sandy regions of Hillsboro, Merrimack, and eastern Sullivan Counties need very careful exploration.

In organizing the North American material of *Digitaria* in the Gray Herbarium it has been found necessary to make the following transfers.

D. SANGUINALIS (L.) Scop., var. **marginata** (Link), n. comb. *D. marginata* Link, Enum. Hort. Bot. Berol. i. 102 (1821). *Panicum sanguinale*, var. Trin, Spec. Gram. t. 93 (1828). *P. sanguinale*, var. *longiglume*, 1. *marginatum* (Link) Doell in Mart. Fl. Bras. ii. pt. 2. 133 (1877). *Syntherisma marginatum* Nash, N. A. Fl. xvii. pt. 2, 154 (1912).

D. ISCHAEMUM Schreb., var. **mississippiensis** (Gattinger), n. comb. *Panicum glabrum*, var. *mississippiense* Gatt. Tenn. Fl. 95 (1887). without proper description; Scribn. Grasses Tenn. pt. 2, 39 (1894). *P. lineare*, var. *mississippiense* Gatt. ex Beal, Grasses N. A. ii. 111 (1896). *Syntherisma linearis mississippiensis* (Gatt.) Nash, Bull. Torr. Bot. Cl. xxv. 300 (1898).—Described by Gattinger and by Scribner as common in sections of Tennessee, this characteristic variety has been collected also in Maryland and Iowa.

D. Simpsoni (Vasey), n. comb. *Panicum sanguinale*, var. *Simpsoni* Vasey, Contrib. U. S. Nat. Herb. iii. 25 (1892). *P. Simpsoni* (Vasey) Beal, Grasses, N. A. ii. 109 (1896). *Syntherisma Simpsoni* (Vasey) Nash, Bull. Torr. Bot. Cl. xxv. 297 (1898).

D. distans (Chase), n. comb. *Syntherisma distans* Chase, Contrib. U. S. Nat. Herb. xvii. 220 (1913).

D. argyrostachya (Steud.), n. comb. *Panicum argyrostachyum* Steud. Syn. Pl. Glum. i. 40 (1854). *Syntherisma argyrostachya* (Steud.) Hitchc. & Chase, Contrib. U. S. Nat. Herb. xviii. 294 (1917).

D. curvinervis (Hack.), n. comb. *Panicum curvinerve* Hack. Oesterr. Bot. Zeitschr. li. 335 (1901). *Syntherisma curvinervis* (Hack) Hitchc. & Chase, Contrib. U. S. Nat. Herb. xviii. 295 (1917).

D. panicea (Swartz), n. comb. *Milium paniceum* Swartz, Prodr. Veg. Ind. Occ. 24 (1788). *Agrostis jamaicensis* Poir. in Lam. Encycl. Suppl. i. 258 (1810). *Axonopus paniceus* (Swartz) Beauv. Ess. Agrost. 12, 154 (1812). *Syntherisma paniceum* (Swartz) Nash, N. A. Fl. xvii. 152 (1912).

The combination *D. panicea* Willd. ex Steud. Nom. ed. 2, pt. 1, 508 (1840) was published as a pure synonym of *Panicum sanguinale* and therefore has no nomenclatorial status.

D. leucocoma (Nash), n. comb. *Panicum phaeothrix* Scribn. U. S. Dept. Agr. Div. Agrost. Bull. 7, 58 (1897), not Trin. Sp. Gram. Ic. iii. t. 91 (1827). *Syntherisma leucocoma* Nash, Bull. Torr. Bot. Cl. xxv. 295 (June, 1898). *Panicum leucocomum* Scribn. l. c. ed. 2, 58 (July, 1898).

D. badia (Scribn. & Merr.), n. comb. *Panicum badium* Scribn. & Merr. U. S. Dept. Agr. Div. Agrost. Bull. 24, 12, fig. 3 (1900). *Syntherisma badia* (Scribn. & Merr.) Chase, Proc. Biol. Soc. Wash. xix. 191 (1906).

D. argillacea (Hitchc. & Chase), n. comb. *Syntherisma argillacea* Hitchc. & Chase, Contrib. U. S. Nat. Herb. xviii. 296 (1917).

GRAY HERBARIUM.

REGARDING GENTIANA ANDREWSII IN THE COASTAL PLAIN OF NEW JERSEY.

BAYARD LONG.

SOME time before the appearance in 1917, of Professor M. L. Fernald's paper on the Closed Gentians of northeastern America¹ so clarifying of difficulties taxonomic, it had been realized by the field-student of southern New Jersey that the distributional status of *Gentiana Andrewsii* in that area was far from satisfactory. From the knowledge of its general distribution in the Piedmont of adjacent Pennsylvania there had been little hesitancy in believing the plant to be more or less frequent in the northern, Piedmont part of New Jersey, but its occurrence in the southern, Coastal Plain portion had not been accepted so readily.

Dr. Britton in 1889 in his *Catalogue of Plants Found in New Jersey* had noted the species from five localities in the southern part of the state. In 1903 Keller and Brown in their *Flora of Philadelphia and Vicinity* had considered it to be generally distributed and omitted all localities. Dr. Stone in 1911 in *The Plants of Southern New Jersey* had reported it as "occasional in the Middle district and rare on the coast and Cape May peninsula." Mr. Norman Taylor in his *Flora of the Vicinity of New York*, the latest treatment covering the state, records the distribution thus: "N. J. Throughout the state, decreasing southward and wanting in the pine-barrens, but found,

¹Fernald, RHODORA, xix. 147 (1917).

rather rarely, near Cape May." This concise statement, summarizing previous reports, on its face, raises no challenge. But in Dr. Stone's work, with its detailed list of localities and notation of specimens as distinguished from mere records, one at once notices that out of eight localities only half are supported by verifying specimens. This in itself, in a work so carefully compiled, need not have attracted attention, had not a personal element entered into consideration—a continual failure during more than ten years rather systematized field-work, to find *Gentiana Andrewsii* growing in southern New Jersey.

This circumstance led to a thorough examination into the generally accepted occurrence of *G. Andrewsii* in the area. During the past several decades, as Prof. Fernald has pointed out, there seems to have been a strong tendency to refer all our Closed Gentians to *G. Andrewsii*. This coupled with the fact that half of the localities noted by Dr. Stone are fairly old records, apparently unsubstantiated by specimens, was at once suggestive. Furthermore, a critical examination of the specimens cited and exploration of stations recorded for the species led to some rather definite conclusions.

There are three specimens at the Philadelphia Academy referred to *G. Andrewsii*—from Kaighn's Point, Absecon, and Cape May.

That from Kaighn's Point, Camden, is a large, excellent specimen, collected some years ago by Alexander MacElwee, and is quite above reproach. Mr. MacElwee tells me that he definitely recalls the collection of the plant. It grew in a large clump on open marshes along the Delaware River above Kaighn's Point. It is well known that many interesting upland species have been collected from the marsh- and swamp-land about Kaighn's Point in former days. Whether the plant actually occurs there now is another matter: every year sees less and less of the natural marsh-land in this part of Camden. Further up the Delaware, in the Coastal Plain area of Mercer County, *G. Andrewsii* occurs below Trenton on the edge of alluvial marshes of the river: probably a habitat very similar to that at Camden.

Considerable light is thrown upon the Absecon material of *G. Andrewsii* by an examination of the specimen supporting the record of *G. Saponaria* from the same locality. With our present knowledge of the group, the basis of this proves to be a specimen of *G. clausa*. This material bears an original label and is part of the col-

lector's own herbarium. The specimen of *G. Andrewsii*, with identical label data, is a portion of another herbarium and was undoubtedly received from the original collector as a duplicate. *G. Saponaria* is unquestionably the species to be expected in southern New Jersey, and it seems very unlikely that both these characteristically upland species should have been found at the far edge of the Pine Barrens and on almost the outer margin of the Coastal Plain. This collector's specimens, unfortunately, are not always above suspicion, and in the present case some mixing of material must have occurred. Until corroborative evidence is obtained on the presence of *G. Andrewsii* and *G. clausa* at Absecon the authenticity of these specimens may be doubted.

The record in Britton's *Catalogue* of *G. Andrewsii* at Absecon, however, suggested the veritable occurrence of a gentian of this type at this locality. Through the kindness of some friends and a resident naturalist of Absecon, I was assured that *Gentiana Andrewsii* could be found along Ohio Avenue. This street proved to parallel Absecon or Doughty Creek, and without difficulty I was able to find in late autumn of 1917, along moist thicket-margins and swales bordering the creek, specimens of *Gentiana Saponaria*—but no other.

The Cape May basis of *G. Andrewsii* consists of two small specimens of that species, with a label not written by the collector, received among accumulated material given the Academy. Demonstrated errors in other critical cases support a common belief that the label-data of this collector's plants was frequently compiled from memory long after collection—and must be valued accordingly. Mr. O. H. Brown, one of the most acute field-observers and collectors in New Jersey, who has spent many years specializing in Cape May County, writes me that he knows nothing of *G. Andrewsii* in Cape May other than the record in *The Plants of Southern New Jersey*. I am confident that the specimen basis of this record cannot be accepted as authentic. Material from Cape May Court House, collected by myself, and from Fishing Creek, Bennett and Cold Spring, by Mr. Brown, shows that the characteristic gentian of Cape May is *G. Saponaria*.

The Mickleton record by B. Heritage, dating from Britton's *Catalogue*, was considered by Dr. Stone to have been verified in the Heritage Herbarium. In late autumn of 1917, a Bottle Gentian was distinguished from the train in a small pasture-meadow not far

north of Mickleton Station. Exploration October 27, showed the plant to be *G. Saponaria*. On following the rill passing through this spot, the species was found flourishing abundantly in a wet swale within sight of the outlying houses of Mickleton village. When there was balanced with these observations the statement obtained shortly thereafter from Mr. C. D. Lippincott that the Bottle Gentian is not rare through Gloucester and Salem Counties, and that he and Mr. Heritage (with whom he was closely associated) had always considered this frequent plant to be *G. Andrewsii*, it was felt that there was little need for further concern over the Mickleton record. However, when opportunity occurred the following year to examine the Heritage Herbarium, now deposited at the George School, near Newtown, Penna., the basis of this record was searched for and two sheets of specimens from Mickleton were found, so named. They both represent *G. Saponaria*.

Of the several records in Britton's *Catalogue* for *G. Andrewsii* which were accepted by Dr. Stone, but for which he was unable to find substantiating specimens, the apparently authentic basis of the one from Pemberton has been since located. It seems not improbable that this record by L. H. Lighthipe may have been accepted from report only, and that its basis is the material preserved in his own private herbarium. He has kindly written me: "The '*Gentiana Andrewsii*' from Pemberton in my collection was first marked as being that species but I find I afterward changed the name to '*G. Saponaria*' which I think is the correct name." The specimen has been generously sent me for personal examination and may be noted as characteristic *G. Saponaria*.

Upon the remaining unverified records—those from Wecksville, Keyport, and Shark River—certain rather significant evidence has been obtained from field-study, more or less indirect evidence but in its general purport, it is believed, pointing to logical solutions.

F. L. Bassett is the authority for the record of *G. Andrewsii* in Britton's *Catalogue* from Wecksville (=Weekstown).¹ Some years ago the local plants in Bassett's herbarium were presented to the Philadelphia Botanical Club by his surviving brother, Mr. George W. Bassett, but unfortunately there is no material substantiating

¹From his location at Hammonton and the region which he is known to have explored, it seems quite clear that "Wecksville" is Weekstown ("Weeksville" of Dr. Stone) on the Mullica River.

this record. On enquiring of Mr. Bassett during the autumn of 1917 whether he could throw any light on this record, it was gratifying to learn that *G. Saponaria* was known to him at Herman—which is within a very short distance of Weekstown, on the opposite side of the Mullica River, and in the same floristic area. Exploration shortly thereafter under the guidance of Mr. Bassett showed the Soapwort Gentian to be frequent at this locality. At Crowleystown, about a mile above Herman, it was seen again. From the additional evidence of material collected along the Mullica at Pleasant Mills by C. A. Gross and at Port Republic by M. L. Johnson (for the examination of which specimen at the New York Botanical Garden I am indebted to Mr. K. K. Mackenzie) it seems reasonable to conclude that the "Wecksville" record of *G. Andrewsii* was based upon *G. Saponaria*.

Through correspondence with Mr. Macy Carhart of Keyport (whose list of ferns will be recalled as particularly interesting for Keyport)¹ I learn that he has been collecting for ten years in Monmouth County and is of the opinion that *Gentiana Andrewsii* does not occur in the region. He has kindly sent me material of *G. Saponaria* which is the only species of this type which he knows in the vicinity of Keyport.

Up to 1917, all gentians of this group from the area, in my own experience, had proved conclusively to be *G. Saponaria*. During that year Mr. Mackenzie and myself had detected *G. clausa* in Burlington County in low woods along Crosswicks Creek above Bordentown. This was apparently a species new to this portion of the state and another of the numerous Alleghanian types that are found to enter the Coastal Plain at this point. But of equal interest was the possible solution to be found therein of the old Shark River record. This dates back to 1856 to Knieskern's *Catalogue of Plants Growing in the Counties of Monmouth and Ocean*. The troublesome point lies in the fact that while recording *G. Andrewsii* from Shark River as "not rare" he notes *G. Saponaria* from the same locality as "rare!" It is not clear whether the records refer to the village formerly called Shark River or to the river itself. Accordingly the most readily accessible spot along the river near the village was selected for exploration and in the autumn of 1919, a day was occupied in endeavoring to solve the supposed frequency of *G. Andrewsii* in this local-

¹ Carhart, Am. Fern Journ. vi. 51 (1916).

ity. The prompt discovery of *G. clausa* as a frequent and characteristic plant of the low, swampy woods along Shark River above the village of Hamilton (formerly Shark River) left little to be desired in the matter of a solution for "*G. Andrewsii*." When to this frequency of *G. clausa* was added only a single station for *G. Saponaria* (and that well across the country toward Farmingdale) discovered during the day's tramp, one could readily believe in the acuteness of Knieskern's observation.

In middle New Jersey the Coastal Plain covers a considerable portion of Mercer and Middlesex Counties and touches several other counties near New York City, but there are no published locality records for the species from this area. Correspondence and the examination of collections has brought to light little information on stations, additional to Trenton, occurring about this portion of the Coastal Plain. Dr. F. W. Pennell writes me of a specimen at the New York Botanical Garden labeled as collected in Bergen County at Moonachie—which is on the edge of the Hackensack Marshes. Mr. Mackenzie tells me that he has collected the species a short distance south of Hackensack (a region very close to Moonachie) and notes that the flora here is predominantly Piedmont. The Coastal Plain is often such a narrow strip in this region that one would hesitate to believe that the plant along the Hackensack Marshes belongs to this association rather than to the general Piedmont flora.

Though this evidence, it must be confessed, is not wholly conclusive that *G. Andrewsii* is one of the rarest of plants in the Coastal Plain of New Jersey, it is certainly significant that the only satisfactory demonstration of its occurrence in this area rests upon material from the alluvial marshes of the Delaware River. The species is a frequent and characteristic plant of the adjacent Piedmont Plateau of Pennsylvania, and in the Piedmont region of New Jersey, the impression of Mr. Mackenzie, who is probably more familiar with that area than any other botanist, is that, while not abundant the plant is widely distributed and occurs in many places. It thus seems logical to believe that the Camden and Trenton stations re-

present very unusual Piedmont extensions, following the course of a large river.¹

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA.

SOME NOTEWORTHY MATINICUS PLANTS.

C. A. E. LONG.

DURING the past two years I have employed a certain amount of my leisure in the study and collection of the plants of this island, and I find many interesting species growing here, both indigenous and introduced. From among them I am sending an account of a few which may be of interest to readers of RHODORA.

AVENA FATUA L. I have found this growing for three successive seasons in the same location, increasing in numbers each season. It is in a waste corner of a dooryard. Rare in New England.

ATHYRIUM ANGUSTUM (Willd.) Presl, var. LAURENTIANUM Butters. This is the extreme northeastern form of our lady fern and is here found somewhat south of its previously known limits. It is moderately abundant in an extensive swampy tract overgrown with Alder, *Betula lutea*, *Amelanchier*, *Lonicera*, *Acer rubrum*, etc., while our more common var. *rubellum* frequents the heavier and somewhat drier woods.

TRIGLOCHIN PALUSTRIS L. Growing on the extreme southwestern end of the island in sand, along with *Glaux maritima*, *Potentilla paci-*

¹Prof. Fernald and Dr. Pennell inform me that there are no specimens from either Staten Island or Long Island at the Gray Herbarium or the New York Botanical Garden, respectively. This additional absence in well known Coastal Plain areas, together with the apparent lack of the species in Connecticut and the adjacent Coastal Plain associations of southern New England, as indicated by Prof. Fernald in his recent paper, at once directs attention to the great body of the southern Coastal Plain, and here the species is completely absent—a fact apparently not very generally recognized. This absence in the southern Coastal Plain was first suggested by the lack of material in the Philadelphia Academy Herbarium and later corroborated by Prof. Fernald at Cambridge and Dr. Pennell at New York. The most southeasterly stations are in the southern Alleghanies—Blowing Rock, Roan Mountain, etc. In view of a recent, surprising statement in the *Flora of the District of Columbia and Vicinity* that *G. Andrewsii* and *G. Saponaria* intergrade and are doubtfully distinct, it is of interest to find that *G. Andrewsii* is essentially absent from the Coastal Plain while *G. Saponaria* is a most characteristic type of that area, extending but rarely back into the Piedmont.

fica, *Juncus Gerardi*, etc., in a small depression protected by a ledge from the severe ocean storms. This species was formerly known on the coast of Washington Co. and at Wells, but not on the coast between.

ERIOPHORUM ANGUSTIFOLIUM Roth., var. *MAJUS* Schultz. Rare south of Hancock Co. A small dense colony growing in an open bog. Very beautiful when in full fruit, having much the appearance of a miniature cotton field.

ANTENNARIA *NEGLECTA* Greene, var. *SIMPLEX* Peck. The first station for this variety since its original discovery in New York.

While "browsing about" in an old field, I was very agreeably surprised to run across a small cluster of about a dozen or fifteen plants of this *Antennaria* with very strict stems, and solitary heads. Dry knoll, with the type.

MONTIA LAMPROSPERMA Cham. This rare and interesting plant grows in matted profusion in one locality, in an opening in wet woodland. This is a range extension somewhat to the southwest.

AMSINCKIA DOUGLASIANA A. DC. I found this far western plant growing here in 1918, and have noted in *RHODORA* its appearance. It is evidently making an attempt to establish itself, as during the past season there was an abundance of plants which grew, blossomed and matured their seed.

LINUM CATHARTICUM L. While on a visit to the mainland last summer, I spent a few hours in the vicinity of "Lily Pond," Rockport, Maine. While there I found an abundance of a delicate white-flowered annual growing on turfy banks, and also, but less luxuriantly, on dry cliffs of abandoned lime quarries, which proved to be *Linum catharticum* L. This is one of the two known stations in New England, and is undoubtedly the one discovered by the Josselyn Botanical Society, in 1913.

Specimens of all the above plants have been verified by Prof. M. L. Fernald, and have been deposited in the herbarium of the New England Botanical Club.

MATINICUS, MAINE.

A NEW ALBINO RASPBERRY.—Among specimens of *Rubus* collected on the wooded slopes of Caribou Mountain, Mason, Maine by Mr. Robert A. Ware, on July 24, 1919, and preserved in the herbaria of Mr. Ware and Mr. Walter Deane is a form of *Rubus idaeus* L., var. *canadensis* Richardson with amber-white or honey-colored instead of the usual red fruit. The "white"-fruited raspberry already known in New England is a form of var. *strigosus* recently taken up as *R. idaeus*, var. *strigosus* (Michx.) Maxim., forma *albus* (Fuller) Fernald, RHODORA, xxi. 96 (1919). The form discovered by Mr. Ware, being a variant of var. *canadensis*, should be called

RUBUS IDAEUS L., var. CANADENSIS Richardson, forma **Warei**, n. f., fructibus flavis.—MAINE: rich woods, slopes of Caribou Mountain, Mason, July 24, 1919, *R. A. Ware* (TYPE in herb. W. Deane).—WALTER DEANE and M. L. FERNALD, Cambridge, Mass.

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